

Application No.: 09/871,467  
Attorney Docket No.: 25094A

### **REMARKS**

Support for the above-requested amendments to claim 1 is found at least at page 2, line 31 – page 3, line 7. Support for the amendments to claims 5 and 18 is found at least at page 4, lines 10 – 19. Claims 10, 12, 21, 23, 27, and 29 have been amended for various grammatical reasons and have not been amended for reasons related to patentability. Claims 16, 22, 25, and 28 have been canceled without prejudice. New claims 30 – 32 are supported at least by page 4, lines 20 – 24. No question of new matter arises and entry of the amendments is respectfully requested.

Claims 1, 4 – 10, 12, 13, 18 – 19, 21, 23 – 24, 26 – 27, and 29 – 32 are before the Examiner for consideration.

### **Addition of Claims 30 - 32**

As shown above, Applicant has added new claims 30 – 32 by amendment and canceled claims 16, 22, 25, and 28. In this regard, Applicant respectfully submits that there are no additional filing fees required for claims 30 – 32 because total number of claims present and paid for in the application has not changed. In addition, because support for these newly added claims is found throughout the specification, as identified in the opening paragraph of the Remarks, Applicant respectfully submits that these newly added claims do not contain any new matter.

### **Examiner Interview**

Applicant wishes to thank the Examiner for the courteous interview conducted on January 19, 2005. Applicant believes that the interview helped to advance the prosecution of this application.

During the interview, Ms. Miller, Applicant's representative, and Mr. Chen, the named inventor of the pending application, discussed how the addition of a surfactant at different stages in a process or in different media affects how the surfactant will act in a system. In addition, the parties discussed the difference between adding a surfactant to a binder composition containing a polymerized polymer and using a surfactant to form a polymer in an emulsion polymerization.

#### **Formal Matter**

Applicant notes that in the Office Action Summary, the Examiner indicates that claims 1, 4 – 10, 12, 13, 16, 18, 19, and 21 – 28 are pending in the application. As discussed in the Examiner Interview, claim 29, which was added by amendment in the Amendment filed on June 7, 2004, was inadvertently left off both the list of pending claims and the pending rejections. During the Interview, the Examiner indicated that claim 29 is pending in the application and that claim 29 did not contain allowable subject matter.

#### **Rejections Under 35 U.S.C. §102(e)/102(b)**

(1) Claims 1, 4 – 10, 12, 13, 16, 18, 19, and 21 – 28<sup>1</sup> have been rejected under 35 U.S.C. §102(e) as being anticipated by Hummerich (U.S. Patent No. 6,071,994) in view of evidence given in Chen (U.S. Patent No. 6,274,661) or Svend (EP 567,480).

(2) Claims 1, 4 – 10, 12, 13, 16, 18, 19, and 21 – 28<sup>2</sup> have been rejected under 35 U.S.C. §102(b) as being anticipated by Reck (U.S. Patent No. 6,099,773) in view of evidence given in Chen (U.S. Patent No. 6,274,661) or Svend (EP 567,480).

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<sup>1</sup> As discussed above, the rejection under 35 U.S.C. §102(e) includes claims 1, 4 – 10, 12, 13, 16, 18, 19, and 21 – 29.

The Examiner asserts that both Hummerich and Reck teach binder compositions that include a polycarboxy binder (e.g., polyacrylic acid), a crosslinking agent (e.g., triethanolamine), and a surfactant (e.g., ethylene oxide/propylene oxide copolymers). The Examiner states that the surfactant may be present in the compositions in an amount of from 0.05 – 20 wt %. It is further asserted that oils (e.g., silicone oils) and coupling agents may be present in the binder compositions of the cited references. In addition, the Examiner asserts that Hummerich teaches a process in which fiber mats are formed by melt spinning. The Examiner asserts that Svend, which is cited by Hummerich, teaches that (1) the fibers are blown downwardly within a forming chamber onto a moving conveyor, and (2) that the binder is sprayed on the fibers while they are still hot. The Examiner relies upon Chen to provide the claimed curing temperatures and times. The Examiner also asserts that Reck teaches a process that involves applying a binder composition to fibers by spraying and then curing the binder. The sprayed fibers are then pressed at a temperature of from 100 – 250 °C for 15 seconds to 30 minutes to give a stable product. The Examiner relies upon the teaching of Chen to provide information regarding the preparation of glass fiber mats.

Applicant respectfully traverses these rejections in view of the following remarks.

With respect to the rejection of claims 1 and 4, Applicant respectfully directs the Examiner's attention to the amendments made to independent claim 1 and submits that claim 1, as amended, defines a fiberglass binder composition that is not taught or suggested within Hummerich or Reck. Both Hummerich and Reck disclose an aqueous binder that contains (1) a polymer derived from an ethylenically unsaturated acid anhydride or an ethylenically unsaturated dicarboxylic acid whose carboxyl groups are capable of forming an anhydride

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<sup>2</sup> As discussed above, the rejection under 35 U.S.C. §102(b) includes claims 1, 4 – 10, 12, 13, 16, 18, 19, and 21 – 29.

group and (2) an alkanolamine. (See, e.g., column 2, lines 28 – 35 of Hummerich and column 2, lines 1 – 8 and column 7, lines 35 – 54 of Reck). The preferred monomers in the polymer are acrylic acid, methacrylic acid, ethane, acrylamide, styrene, and acrylonitrile. (See, e.g., column 4, lines 1 – 6 of Hummerich and column 3, lines 42 – 50 of Reck). An anionic, nonionic, cationic, or amphoteric emulsifier may be added during polymerization to stabilize the polymer. (See, e.g., column 6, lines 9 – 14 of Reck and column 6, lines 55 – 61 of Hummerich).

Although each of Hummerich and Reck disclose an aqueous binder composition, neither Hummerich nor Reck teach (or suggest) the fiberglass insulation binder composition claimed in amended independent claim 1. In particular, Hummerich and Reck do not teach a fiberglass binder composition formed of a binder pre-mix containing a polycarboxy polymer and a polyhydroxy crosslinking agent, water, and a surfactant that is added to the binder pre-mix in an amount sufficient to control the surface tension of the binder composition to less than the surface tension of an equivalent weight percent solids phenolic binder composition as claimed in amended claim 1. As a result, independent claim 1 cannot be anticipated by either Hummerich or Reck. Furthermore, neither Chen nor Svend add anything to the teachings of Hummerich or Reck to meet the features of the invention as set forth in amended claim 1. Thus, claim 1, and all claims dependent therefrom (e.g., claims 4, and 21, 23, and 30), are not anticipated by (or obvious over) Hummerich or Reck.

With respect to the rejection of claims 5 – 10, 12, 13, and 16, Applicant respectfully directs the Examiner's attention to the amendments made to independent claim 5 and respectfully submits that none of the Examiner's cited references teach (or suggest) the process for producing a fiberglass insulation binder as presently claimed. In particular, Applicant submits that neither Hummerich nor Reck teach (or suggest) a process for

producing a fiberglass insulation binder that includes forming a polycarboxy polymer, combining the polycarboxy polymer, a polyhydroxy crosslinking agent, water in an amount sufficient to form a mixture containing up to 98 wt-% water based on the total weight of solids in the mixture, and a surfactant, where the surfactant is present in an amount sufficient to control the surface tension of the binder to less than or about 66 dyne/cm as claimed in amended independent claim 5. Both Hummerich and Reck teach that if a polymerization method such as emulsion, precipitation, suspension, or dispersion is used to form the polymer, an anionic, nonionic, cationic, or amphoteric emulsifier may be added to stabilize the polymer during the polymer's formation. (*See, e.g.*, column 6, lines 55 – 60 of Hummerich and column 6, lines 9 – 14 of Reck). However, neither Hummerich nor Reck teach or suggest adding a surfactant after the formation of the polycarboxy polymer as is presently claimed. Because Hummerich and Reck do not teach the process for forming a fiberglass insulation binder that adds a surfactant after the formation of the polycarboxy polymer and where the surfactant is added in an amount sufficient to control the surface tension of the binder to less than about 66 dyne/cm as claimed in amended claim 5, neither Hummerich nor Reck can anticipate the presently claimed invention. Furthermore, neither Chen nor Svend add anything to the teachings of Hummerich or Reck to meet the features of the invention as set forth in amended claim 1. Because claims 6 – 10, 12, 13, 24, 26, and 31 are dependent on claim 5, which, as discussed above, is not anticipated by Hummerich or Reck, Applicant submits that claims 6 – 10, 12, 13, 24, 26, and 31 are also not anticipated by either Hummerich or Reck.

With respect to the rejections of claims 18, 19, and 21 – 28<sup>3</sup>, Applicant respectfully submits that none of the Examiner's cited references teach (or suggest) a process for

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<sup>3</sup> Applicant notes that claim 29 is properly included with the rejection of claim 18.

manufacturing a fiberglass insulation product as presently claimed in independent claim 18. In particular, Applicant submits that neither Hummerich nor Reck teach (or suggest) a process for producing a fiberglass insulation product that includes the steps of (1) mixing a polycarboxy polymer and a polyhydroxy crosslinking agent to form a binder pre-mix having approximately 50 – 60 wt % water, (2) adding a surfactant to the binder pre-mix to form a binder composition where the surfactant is added in an amount sufficient to control the surface tension of said binder to less than the surface tension of an equivalent weight percent solids phenolic binder and form a fiberglass binder composition, (3) applying the binder composition to glass fibers, (4) forming the glass fibers into a mat, and (5) curing the mat. As discussed above, neither Hummerich nor Reck teach or suggest adding a surfactant after the formation of the polymer, *e.g.*, adding a surfactant to a binder pre-mix containing a polycarboxy polymer and polyhydroxy crosslinking agent as presently claimed. As a result, independent claim 18 cannot be anticipated by, or be obvious over, Hummerich or Reck, either alone or in combination. Because claims 19, 27, 29, and 32 are dependent on claim 18, which is not taught (or suggested) by Hummerich or Reck, Applicant submits that independent claim 18, and all claims dependent therefrom, are patentable.

With respect to newly added dependent claims 30 – 32, Applicant respectfully submits that these claims contain subject matter that is neither taught nor suggested within Hummerich or Reck. As discussed above, both Reck and Hummerich teach an aqueous binder composition that contains (1) a polymer derived from an ethylenically unsaturated acid anhydride or an ethylenically unsaturated dicarboxylic acid whose carboxyl groups are capable of forming an anhydride group and (2) an alkanolamine. Applicant respectfully submits that none of the recited polyols in claims 30 - 32 are an alkanolamine as required by both Hummerich and Reck. In addition, there is no teaching within either Hummerich or

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Reck of a binder composition or a method of making a binder composition that includes the polyols recited in claims 30 - 32. Therefore, Applicant respectfully submits that claims 30 - 33 contain allowable subject matter.

In view of the above, Applicant submits that the present invention is not anticipated by Hummerich or Reck and respectfully requests that these rejections be reconsidered and withdrawn.

### CONCLUSION

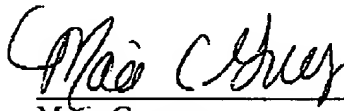
In light of the above, Applicant believes that this application is now in condition for allowance and therefore requests favorable consideration.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 50-0568 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

Date: 2/7/05

  
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